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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,207	02/25/2004	Thomas Blatz	DT-6764	3036

30377 7590 03/08/2005

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EXAMINER


SHARP, JEFFREY ANDREW

ART UNIT PAPER NUMBER

3677

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

 <b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/786,207	BLATZ, THOMAS	
	Examiner	Art Unit	
	Jeffrey Sharp	3677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 10-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                    |                                                                             |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____                                                |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____                                                                        | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

*Status of Claims*

[1] Claims 1-13 are pending.

An election was made by Applicant on 11 February 2005 to prosecute species I claims 1-4 and 6-9. Claims 6-9 are dependent on a non-elected claim 5, and so are treated as being dependent on claim 1. Claims 1 and 4 are currently generic as noted by Applicant.

Claims 5 and 10-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11 February 2005.

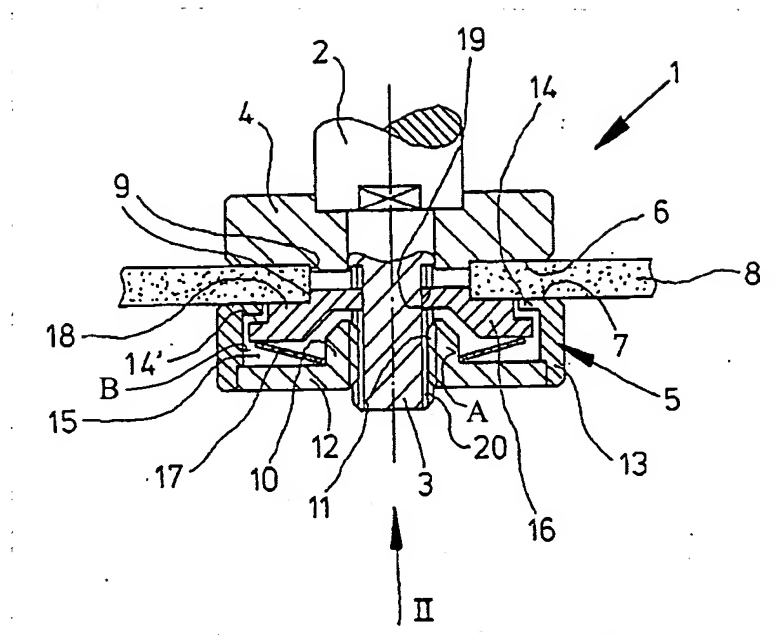
*Claim Rejections - 35 USC § 103*

[2] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[3] Claims 1-3 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz et al. US-5,545,078 in view of Strim DE-3012836 A1.

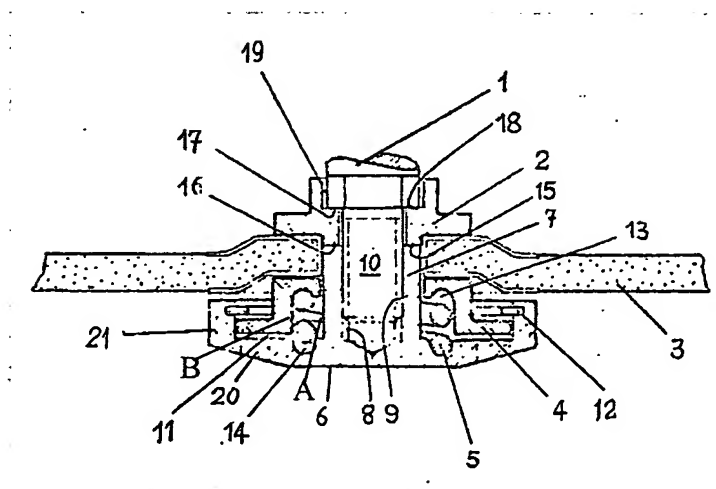
Schulz et al. teach a quick lock nut for positive friction locking a disc-like tool comprising a threaded spindle (2,3), nut (10,11,12), manually displaceable tensioning means (5,13,14), stop (16,18), and flat spring (17). Schulz et al. teach a radially outwardly radial stop (A) and a radially inwardly oriented stop (B) that limit displacement of the spring in a radial direction transverse to the axis. See also, Figure 1 of DE 3917345 A2, which shows inner and outer stop means (21) holding a flat spring (22). See further, Figures 1 and 2 of US-5,161,334, which shows inner and outer stop means holding a flat spring (10,19).



Schulz et al. US-5,545,078

However, Shultz et al. fail to disclose expressly, the flat spring (17) to be mounted *in* both the nut (10,11,12) and stop (16,18) as seen in Applicant's submitted drawings and as disclosed by Applicant in claims 1 and 2.

Strim suggests groove means (13,14) on both a nut (20) and stop (4) for securing an axial tensioning spring device (5) held between the two for axial tensioning. Note that Strim also shows a radially outwardly radial stop (A) and a radially inwardly oriented stop (B) that helps keeps the spring element in place.



Strim DE-3012836 A1

At the time of invention, it would have been obvious to one of ordinary skill in the art, to modify the quick lock nut taught by Schulz et al., to comprise securing groove means for capturing the ends of a spring member as suggested by Strim, in order to more positively secure the spring element.

As for claim 6, the flat spring taught by Schulz et al. is broadly construed as *'a uniformly flat circular cylinder sleeve segment strip'*.

As for claim 7, the flat spring taught by Schulz et al. is *'displaceable in a radial generally perpendicular direction relative to the axial direction of said spindle'*.

[4] Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz et al. US-5,545,078 in view of Strim DE-3012836 A1 as discussed above, and in even further view of Greenwood US-3,581,609.

Schulz et al. v. Strim teaches all of the limitations of the instant claim 1; however, Schulz et al. v. Strim fails to teach a flat spring comprising a plurality of springs distributed in a circumferential arrangement encircling the axis of rotation.

Greenwood suggests a flat spring (15) comprising a plurality of springs (16) distributed in a circumferential arrangement encircling the axis of rotation. It would be readily understood and appreciated by those of ordinary skill in the art, that the flat spring disclosed by Greenwood is used in a lock nut assembly for use with a tool, and therefore could also be used as a substitute for the flat spring used by Shultz et al. Note that the Shultz et al. reference broadly claims *'spring means for exerting a spring force'* in claim 1.

#### ***Allowable Subject Matter***

[5] Flat springs, wave springs, feather springs, and coil springs are customary in lock nuts for disc-like tools. However, the prior art does not obviously suggest a cylindrical (i.e., 'barrel', 'sleeve') spring comprising multiple outwardly bowed leaf springs extending generally parallel to the axis of rotation and distributed in a circumferential arrangement encircling the axis of rotation (shown in Figures 1 and 2); said multiple bowed leaf springs being radially inwardly deflectable when engaged by a surrounding axially displaceable tensioning sleeve, and each of said multiple bowed leaf springs having two axially distant ends -- one being mounted in a stop and the other in an inner threaded part of a quick lock nut for positive friction locking a disc-like tool.

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Further, the prior art does not suggest the foregoing spring (shown in Figures 1 and 2) being surrounded and engaged by an axially displaceable tensioning sleeve, wherein upon a manual axial force on said tensioning sleeve, each outwardly bowed leaf spring is radially inwardly displaced via ramp (i.e., 'cam') engagement means, so as to create an axial tensioning effect between the tool and inner threaded part.

Applicant is urged to more clearly define the disclosed spring structure shown in Figures 1 and 2 from prior art 'flat springs'.

### *Conclusion*

[6] The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is as follows:

DE 3644440 A	DERWENT	STABLER, M
DE 3644441 A	DERWENT	BORST, E
DE 3700968 A	DERWENT	HAUSSLEIN, F et al.
DE 3841181 A	DERWENT	BARTH, W et al.
DE 3903765 A	DERWENT	EISENHARDT, A
DE 3903767 A1	EPO	GOECMEZ, MUSA
DE 3917345 A1	EPO	GOECMEZ, MUSA et al.
WO 8804975 A1	EPO	HELM, WINFRIED et al.
WO 9006210 A1	EPO	SCHAAAL, GUENTER et al.
US 20030152443 A1	US-PGPUB	Liersch, Ralph
US 0518165 A	USPAT	Thalaker
US 0675664 A	USPAT	Moore
US 1040609 A	USPAT	Bevan et al.
US 1242786 A	USPAT	Finch
US 1328488 A	USPAT	BOWDEN JUNIUS A
US 1394778 A	USPAT	JOSEPH MENCHEN et al.
US 1466176 A	USPAT	KRAFT HENRY P
US 1561880 A	USPAT	MARK MORRISON et al.
US 1636669 A	USPAT	Blauvelt
US 1750523 A	USPAT	ALOIS KASCHTOFSKY
US 2396142 A	USPAT	ALLEN REX W
US 3302960 A	USPAT	HERRMANN ADOLF L
US 3319689 A	USPAT	DONALD MCDUGALL et al.
US 3830271 A	USPAT	Soubitez; Pierre
US 4322190 A	USPAT	Anderson; Ken G.
US 4453449 A	USPAT	Hollmann; Martin
US 4687392 A	USPAT	Bidwell; Robert E.
US 4768909 A	USPAT	Warkotsch; Horst
US 4850154 A	USPAT	Grammer; Werner et al.
US 4941790 A	USPAT	Kim; Manfred
US 4955744 A	USPAT	Barth; Walter et al.
US 5042207 A	USPAT	Kim; Manfred
US 5161334 A	USPAT	Schaal; Gunter et al.
US 5180268 A	USPAT	Richardson; Arthur B.

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US 5288191 A	USPAT Ruckert; Edvard et al.
US 5364213 A	USPAT Teramura; Koji
US 5388942 A	USPAT Bonacina; Sergio et al.
US 5567100 A	USPAT Nakamura; Daijiro
US 5577872 A	USPAT Nakamura; Daijiro
US 5603595 A	USPAT Nygren, Jr.; William D.
US 5810533 A	USPAT Nakamura; Daijiro
US 5871322 A	USPAT Nakamura; Daijiro
US 5899648 A	USPAT Kanaan; Roger J. et al.
US 6027294 A	USPAT Newby; John C.
US 6149364 A	USPAT Maeda; Yutaka
US 6158936 A	USPAT Thommes; Friedrich
US 6179512 B1	USPAT Gibson; Stephen E. et al.
US 6244806 B1	USPAT Kato; Tosiuyuki
US 6261041 B1	USPAT Nakamura; Daijiro
US 6273659 B1	USPAT Goto; Yoshiaki
US 6701629 B2	USPAT Krondorfer; Harald et al.
US 6786811 B2	USPAT Krondorfer; Harald et al.
US 6808347 B2	USPAT Liersch; Ralph

[7] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Sharp whose telephone number is currently (703) 305-0426, but will change to (571) 272-7074 in April 2005 due to a move to the Alexandria, VA campus. The examiner can normally be reached 7:00 am - 5:30 pm Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J.J. Swann can be reached on (703) 306-4115. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAS

  
**ROBERT J. SANDY**  
**PRIMARY EXAMINER**